Option Printer

ZU-606

SERVICE MANUAL

Code Y111420-1

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ZU-606

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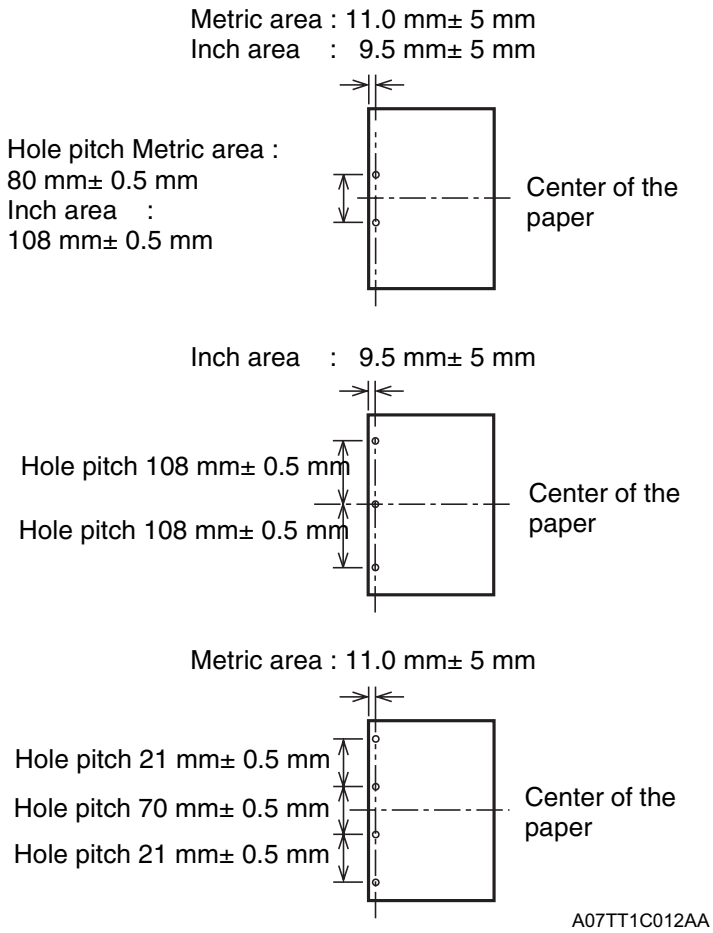
OUTLINE

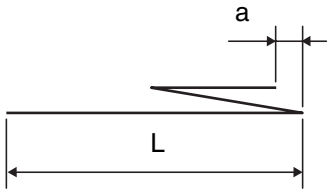
1. PRODUCT SPECIFICATIONS

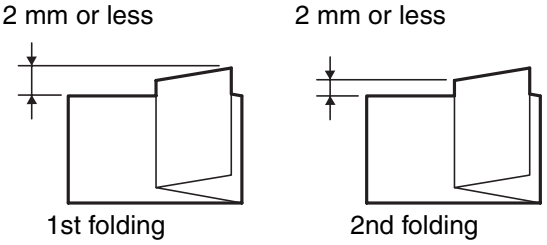
A. Type

Type	Z-folding multi punching device

B. Functions

Punch	Punching method	Reciprocal punching method (punching each paper)
	No. of holes	Metric area : 2 holes/4 holes (switched automatically) Inch area : 2 holes/3 holes (switched automatically)
	Hole diameter	Metric area : 6.5 mm± 0.5 mm Inch area : 8.0 mm± 0.5 mm
	Hole position	
Folding method		Buckle folding method with the roller pair

<table>
<tr><td>Z-folding</td><td>Folding length</td><td>


A07TT1C010AA
<table>
<tr><th>Paper size</th><th>L (mm)</th><th>a (mm)</th></tr>
<tr><td>A3</td><td>209 or less</td><td rowspan="4">4 ± 2</td></tr>
<tr><td>B4</td><td>181 or less</td></tr>
<tr><td>11 x 17</td><td>215 or less</td></tr>
<tr><td>8K *1</td><td>194 or less</td></tr>
</table>
*1: Only for the Taiwan market
</td></tr>
<tr><td></td><td>Folding precision</td><td>


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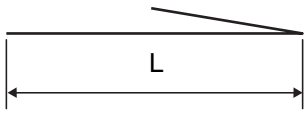
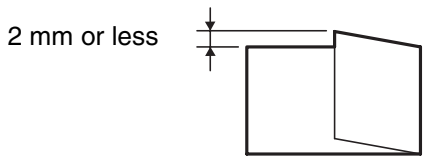
</td></tr>
<tr><td>Folding</td><td>Folding length</td><td>


A07TT1C003AA
<table>
<tr><th>Paper size</th><th>L (mm)</th></tr>
<tr><td>8-1/2 x 14</td><td>263 or less</td></tr>
</table>
</td></tr>
<tr><td></td><td>Folding precision</td><td>


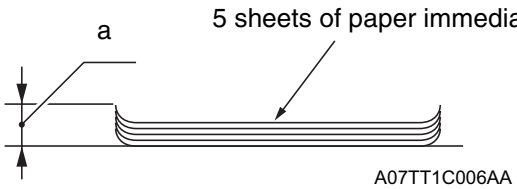
A07TT1C004AA
</td></tr>
</table>

<table>
<tr><td>Maximum tray capacity (80 g/m²)</td><td>The maximum number of sheets for the FS main tray at the Z-folding operation
• Z-folding continuous: Max. 30 sheets
• Z-folding/stapling: See the table below
<table>
<tr><td colspan="2">No. of sheets per staple</td><td rowspan="2">No. of set on the main tray</td></tr>
<tr><td>No. of fold sheets</td><td>No. of unfold sheets</td></tr>
<tr><td rowspan="2">1 sheet</td><td>1 to 40 sheets</td><td>20 set</td></tr>
<tr><td>41 to 90 sheets</td><td>10 set</td></tr>
<tr><td>2 sheets</td><td>1 to 80 sheets</td><td>10 set</td></tr>
<tr><td>3 sheets</td><td>1 to 70 sheets</td><td>4 set</td></tr>
<tr><td>4 sheets</td><td>1 to 60 sheets</td><td>3 set</td></tr>
<tr><td>5 sheets</td><td>1 to 50 sheets</td><td>2 set</td></tr>
<tr><td>6 sheets or greater</td><td colspan="2">Not guaranteed</td></tr>
</table></td></tr>
</table>

C. Type of paper

<table>
<tr><td>No punch mode</td><td colspan="2">Same as the main body.</td></tr>
<tr><td rowspan="4">Punch mode</td><td colspan="2">Paper size
• Combination with the folding/saddle stitching mode is not available.</td></tr>
<tr><td>Metric area</td><td>2holes:
A3, B4, A4, A4S, B5, B5S, A5, A5S,
8K *1, 16K *1, 16KS *1,
8 x 13, 8-1/2 x 13, 8-1/4 x 13, 8-1/8 x 13-1/4
4holes:
A3, B4, A4, B5, 8K *1, 16K *1

*1: Only for the Taiwan market</td></tr>
<tr><td>Inch area</td><td>2holes:
11 x 17, 8-1/2 x 14, 8-1/2 x 11, 8-1/2 x 11S,
5-1/2 x 8-1/2, 5-1/2 x 8-1/2S, 7-1/4 x 10-1/2 , 7-1/4 x 10-1/2S
3holes:
11 x 17, 8-1/2 x 11</td></tr>
<tr><td>Type of paper</td><td>64 to 90 g/m² of the high-quality paper and the plain paper
• Special paper is not guaranteed. The punching of label paper, tab paper, OHP paper, blueprint master and binding-holed paper are not allowed.</td></tr>
<tr><td rowspan="2">Z-folding mode</td><td>Paper size</td><td>A3, B4, 11 x 17, 8-1/2 x 14, 8K
• For B4 paper (including the mix of the paper), the combination with the stapling mode is not available.</td></tr>
<tr><td>Type of paper</td><td>64 to 90 g/m² of the high-quality paper and the plain paper
• Special paper is not supported. Label paper, tab paper, transparency film, paper, holed paper, and low stiffness paper are not supported in Z-folding mode.</td></tr>
<tr><td rowspan="2">Folding mode</td><td>Paper size</td><td>8-1/2 x 14</td></tr>
<tr><td>Type of paper</td><td>64 to 90 g/m² of the high-quality paper and the plain paper
• Special paper is not supported. Label paper, tab paper, transparency film, paper, holed paper, and low stiffness paper are not supported in folding mode.</td></tr>
</table>

Paper curling	 a : Excluding the OHP paper : Amount of curl: 15 mm or less OHP paper : Amount of curl: 10 mm or less

D. Maintenance

Maintenance	Same as the main body.
Machine service life	Same as the main body.

E. Machine specifications

Power requirements	100 to 240 VAC (automatic switching)
	DC5 V (supplied from the main body)
Max. power consumption	120 W or less
Dimensions	169 mm (W) x 660 mm (D) x 1027.5 mm (H) 6.65 inch (W) x 25.98 inch (D) x 40.45 inch (H)
Weight	45 kg (99.21 lb)

F. Operating environment

Temperature	10 to 30 °C
Humidity	15 to 85 % RH (with no condensation)

NOTE

- **These specifications are subject to change without notice.**

MAINTENANCE

2. PERIODICAL MAINTENANCE PROCEDURE

2.1 Punch section

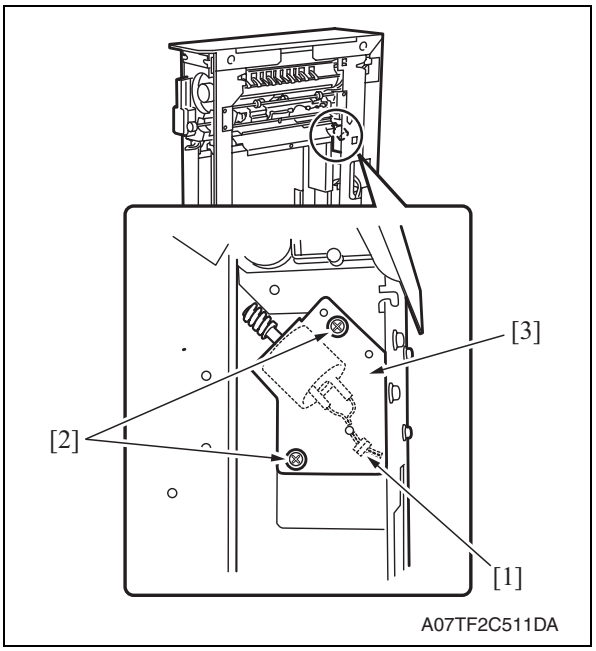
2.1.1 Replacing the punch scraps conveyance motor (M7)

A. Periodical replaced parts/cycle

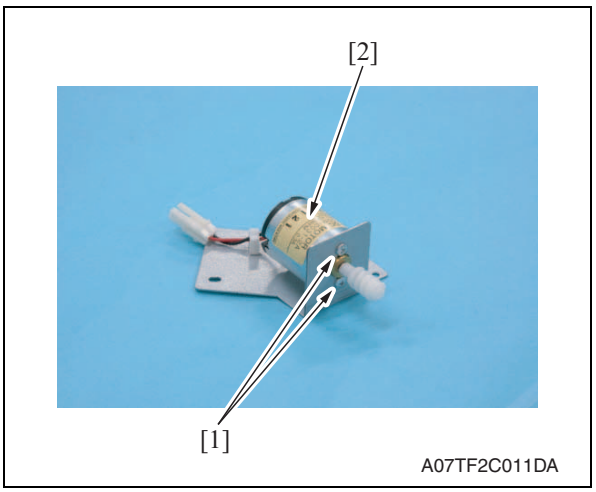
- Punch scraps conveyance motor: Every 1,000,000 counts

B. Procedure

1. Remove the Z folding unit.
See P.14



2. Disconnect the connector [1] and remove two screws [2], and remove the punch scraps conveyance motor assy [3].



3. Remove two screws [1], and remove the punch scraps conveyance motor [2].

4. Reinstall the above parts following the removal steps in reverse.

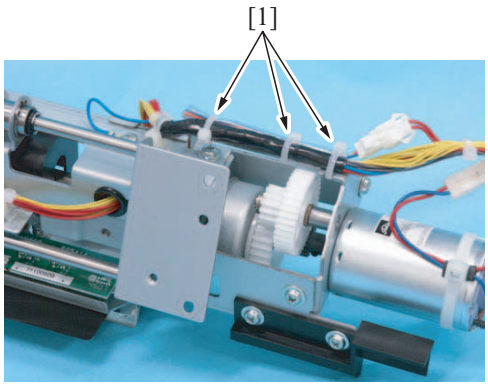
2.1.2 Replacing the punch clutch (CL1)

A. Periodical replaced parts/cycle

- Punch clutch: Every 1,000,000 counts

B. Procedure

1. Remove the Z folding unit.
See P.14
2. Remove the punch unit.
See P.17



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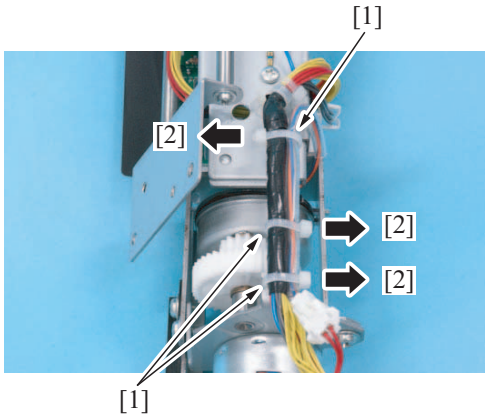
3. Cut three wiring harness bands [1].



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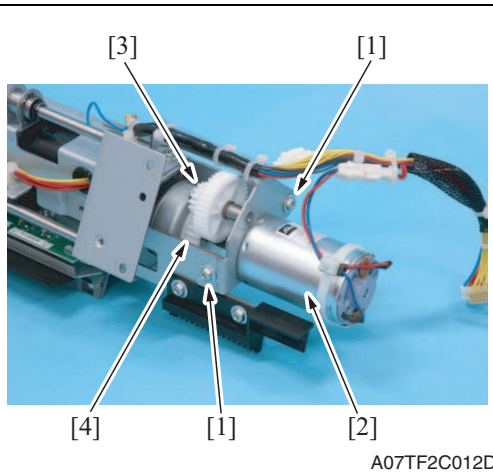
NOTE

- **When bind the wiring harness band [1], face them to the arrow-marked direction [2] to avoid the contact with the conveyance section of the main body.**



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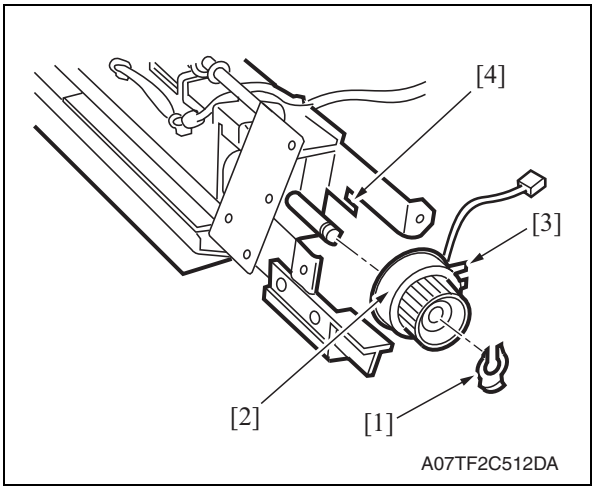
4. Remove two screws [1], and remove the punch motor assy [2].

NOTE

- **When reinstalling the punch motor assy [2], press the punch motor gear [3] to the gear [4]. Be sure to check that the gears rotate smoothly and there is appropriate backlash.**



5. Remove the C-clip [1], and remove the punch clutch [2].

NOTE

- **When reinstalling punch clutch [2], be sure to check the stopper [3] is engaged with a projection [4] of metal plate.**

6. Reinstall the above parts following the removal steps in reverse.

3. OTHER MAINTENANCE ITEM

3.1 Items not allowed to be disassembled and adjusted

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

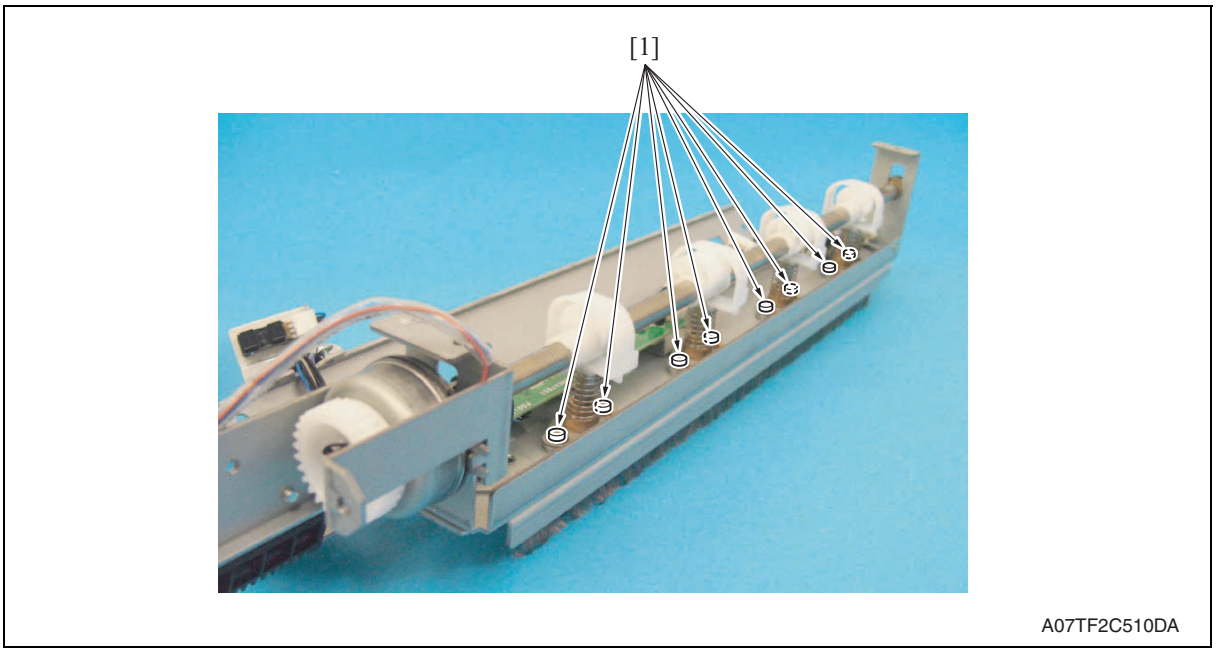
⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

E. Parts not allowed to be removed

(1) Punch section

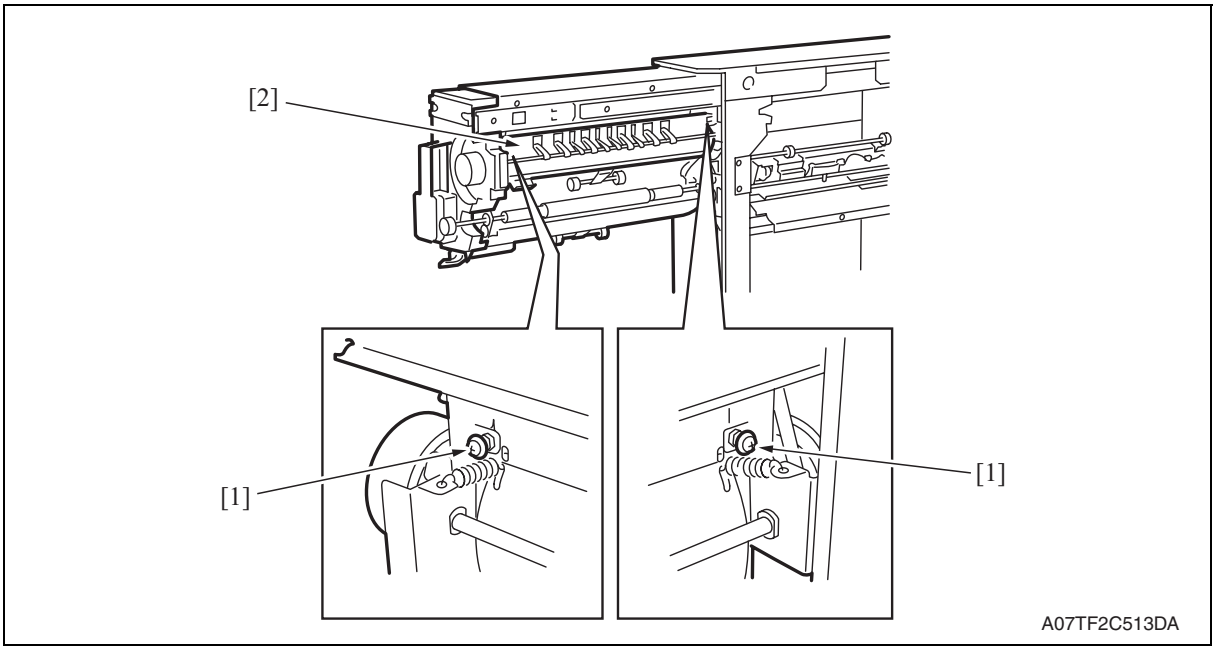
- The precision of the punch edges is ensured in the punch unit. The normal punch operation may be affected if it is disassembled. Never loosen or remove these screws and retaining rings.



[1] Screws not allowed to be removed

(2) Z-folding section

- The screws position the clearance of the conveyance guide plate. The precision of the Z-folding may be affected if it is disassembled. Never loosen or remove these screws.



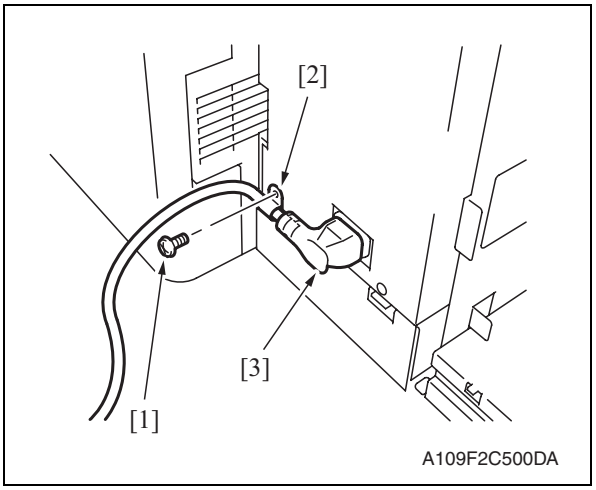
[1] Screws not allowed to be removed [2] Conveyance guide plate

3.2 Disassembly/reassembly parts list

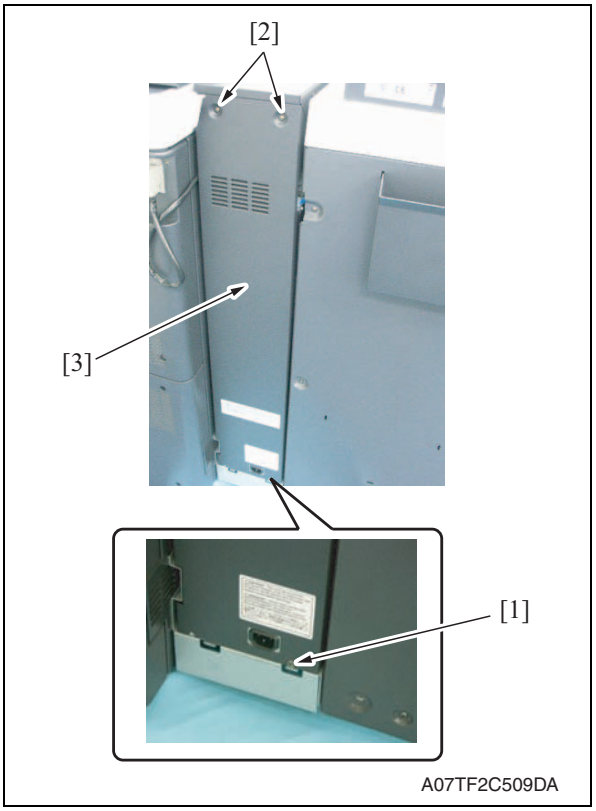
Section	Part name	Ref. page
Exterior parts	Rear cover	P.11
	Upper cover	P.12
	Right cover	P.12
	Front cover	P.13
Units	Z folding unit	P.14
	Punch unit	P.17
	Z folding/conveyance unit	P.18
Electrical parts	Punch motor (M4)	P.20
	Main motor (M6)	P.21
	Registration motor (M1)	P.23
	Punch shift motor (M5)	P.24
	Main motor cooling fan (FM1)	P.25
	ZU control board (ZUCB)	P.26
	Paper size detect board (PSDTB)	P.26

3.3 Disassembly/reassembly procedure

3.3.1 Rear cover



1. Remove the screw [1] and the clamp [2], and remove the power cord [3].

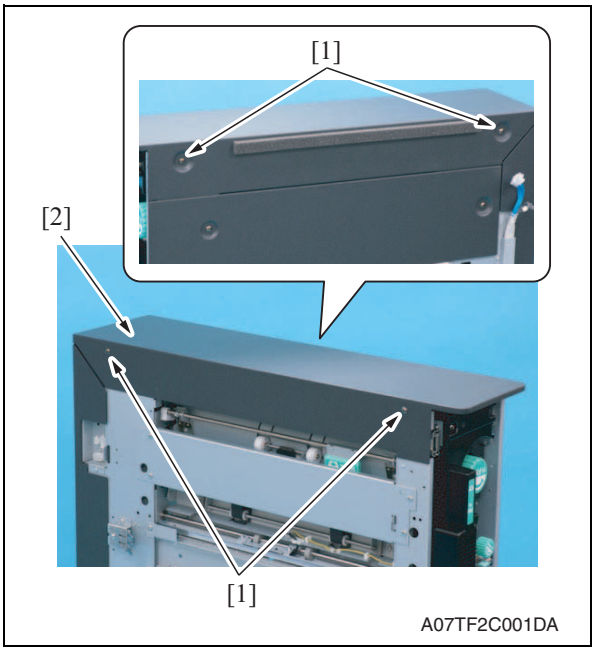


2. Loosen the screw [1], and remove two screws [2], and remove the rear cover [3].

3. Reinstall the above parts following the removal steps in reverse.

3.3.2 Upper cover

1. Remove the Z folding unit.
See P.14

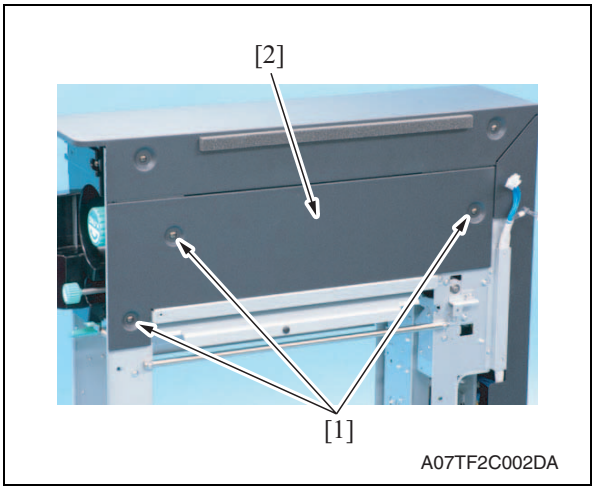


2. Remove four screws [1], and remove the upper cover [2].

3. Reinstall the above parts following the removal steps in reverse.

3.3.3 Right cover

1. Remove the Z folding unit.
See P.14

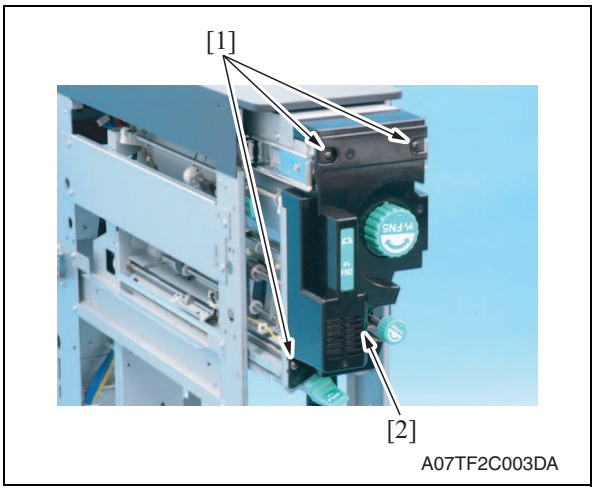


2. Remove three screws [1], and remove the right cover [2].

3. Reinstall the above parts following the removal steps in reverse.

3.3.4 Front cover

1. Remove the Z folding unit.
See P.14

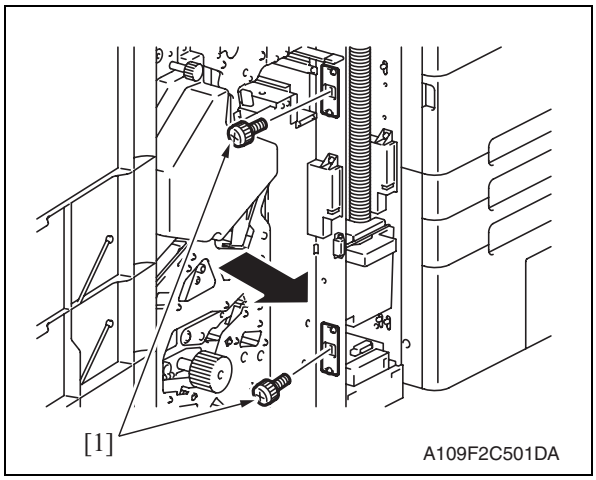


2. Remove three screws [1], and remove the front cover [2].

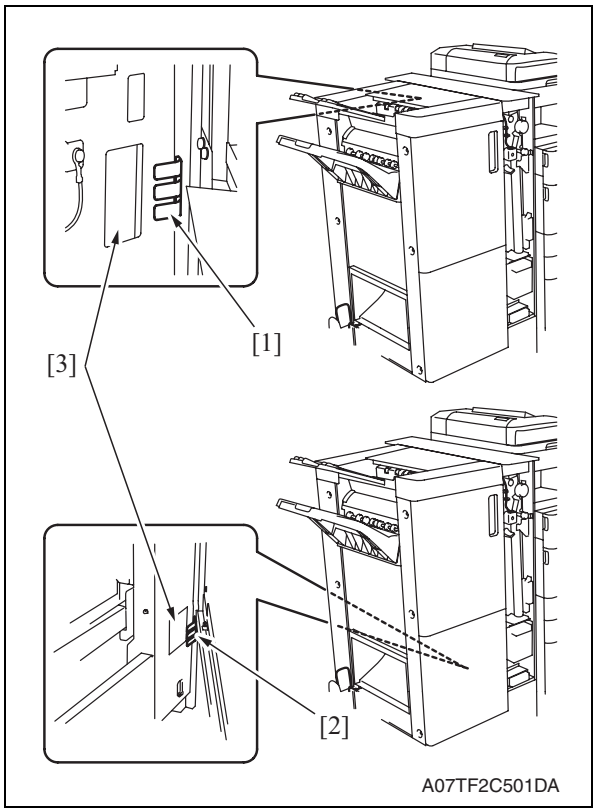
3. Reinstall the above parts following the removal steps in reverse.

3.3.5 Z folding unit

A. Removal from the finisher

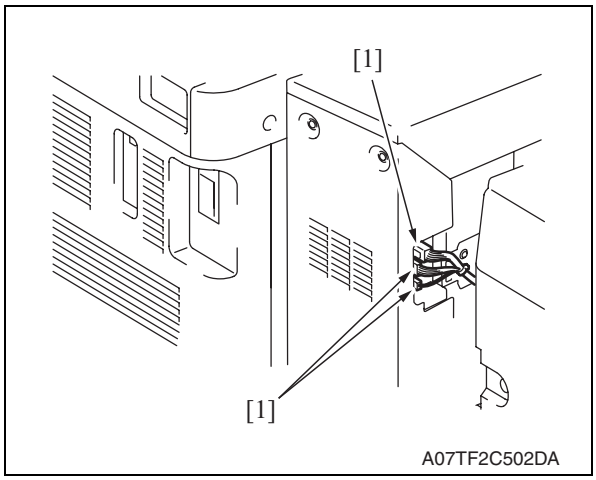


1. Open the front door of finisher [1].
2. Remove two screws [2] and slide the finisher as shown in the illustration.



NOTE

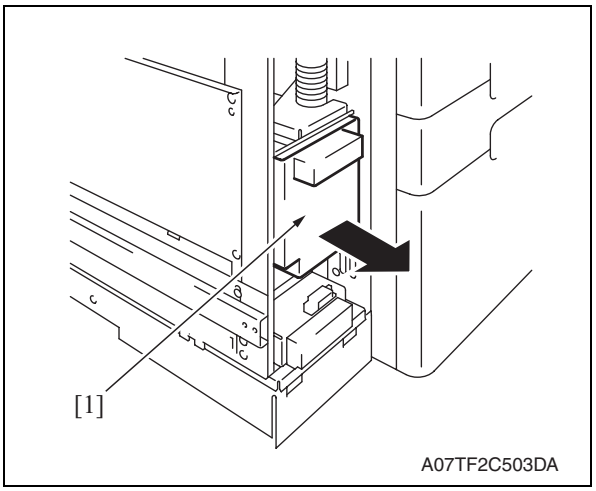
- **To mount the finisher, align the hook portions of the mounting bracket [1] and [2] with the upper and lower holes [3] in the finisher. Then, push the finisher toward the rear.**



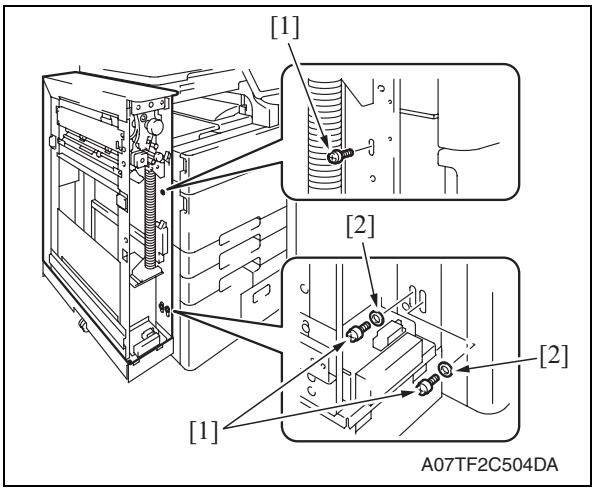
3. Disconnect three connectors [1] and remove the finisher.
4. Reinstall the above parts following the removal steps in reverse.

B. Removal from the main body

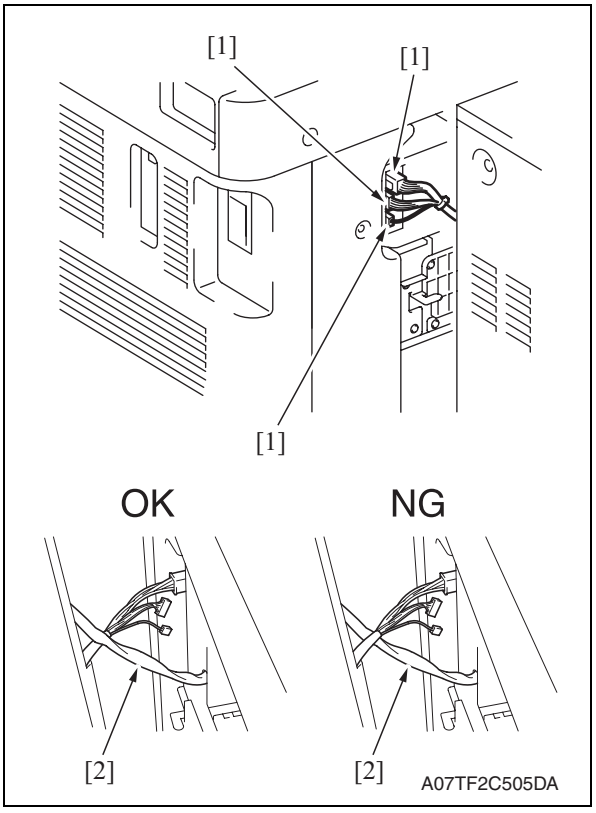
1. Remove the finisher.
See P.14



2. Remove the punch waste box [1].



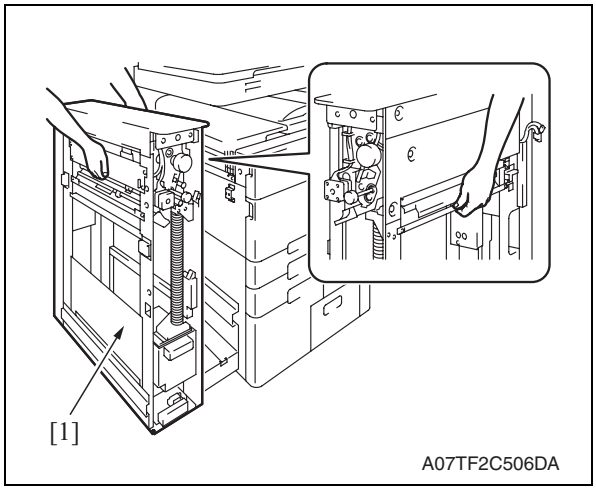
3. Remove three screws [1] and two washers [2].



4. Disconnect three connectors [1].

NOTE

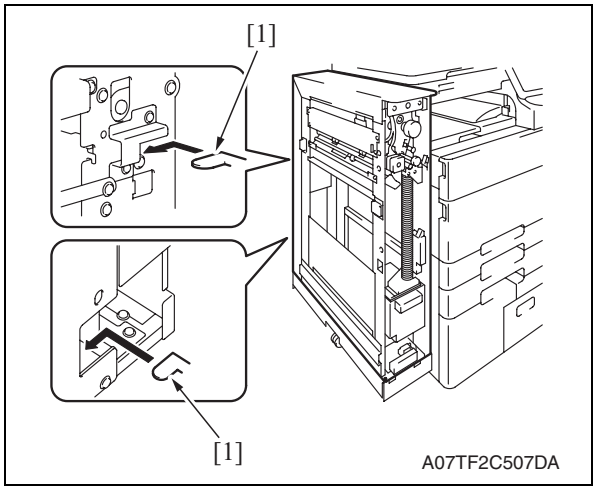
- **When reconnecting the connectors, make sure that the harness of the Z folding unit is placed below the cable [2] of the horizontal transport unit.**



5. Remove the Z folding unit [1].

⚠ CAUTION

- **Make available collective manpower of an appropriate size for transporting the machine.**



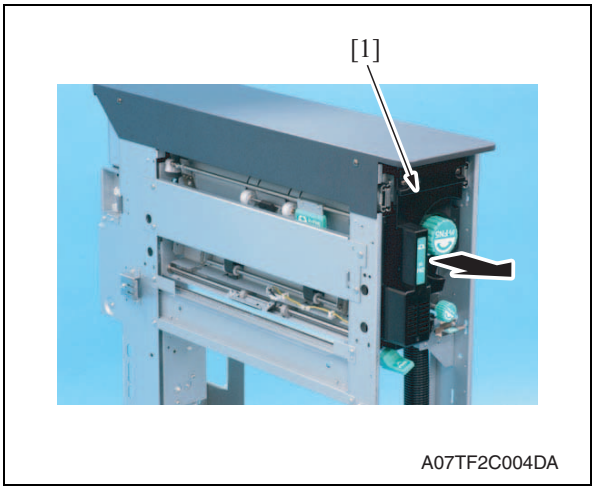
NOTE

- **When reinstalling the Z folding unit, use the upper/lower brackets [1] as a guide for positioning the Z folding unit.**

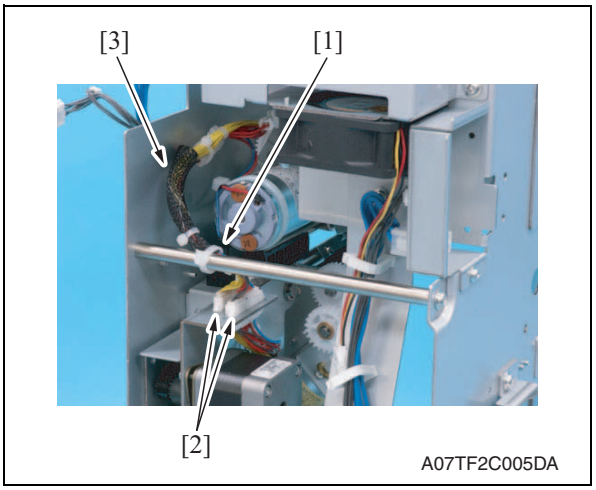
6. Reinstall the above parts following the removal steps in reverse.

3.3.6 Punch unit

1. Remove the Z folding unit.
See P.14
2. Remove the rear cover.
See P.11
3. Remove the right cover.
See P.12



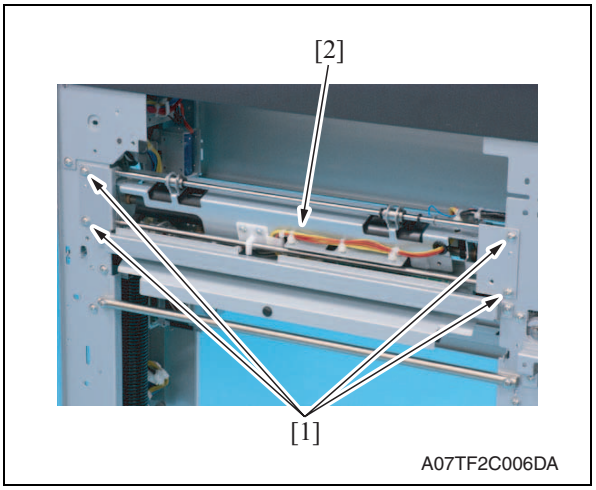
4. Pull out the Z folding/conveyance unit [1].



5. Cut the wiring harness band [1], and disconnect two connectors [2].

NOTE

- **When bind the wiring harness band [1], be sure to bind it so that the wiring harness [3] passes the wiring harness band [1] from left to right from the view of the rear.**
- **Be sure to bind the wiring harness band [1] with sufficient length of the wiring harness [3] when the punch unit move to forward.**

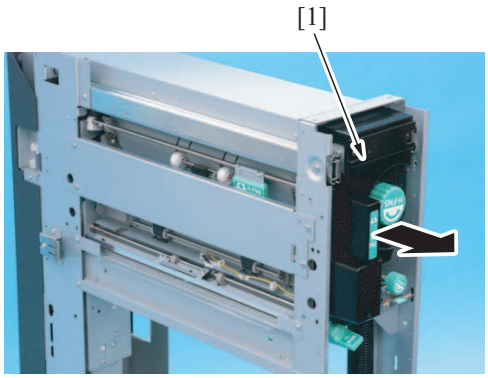


6. Remove four screws [1], and remove the punch unit [2].

7. Reinstall the above parts following the removal steps in reverse.

3.3.7 Z folding/conveyance unit

1. Remove the Z folding unit.
See P.14
2. Remove the upper cover.
See P.12



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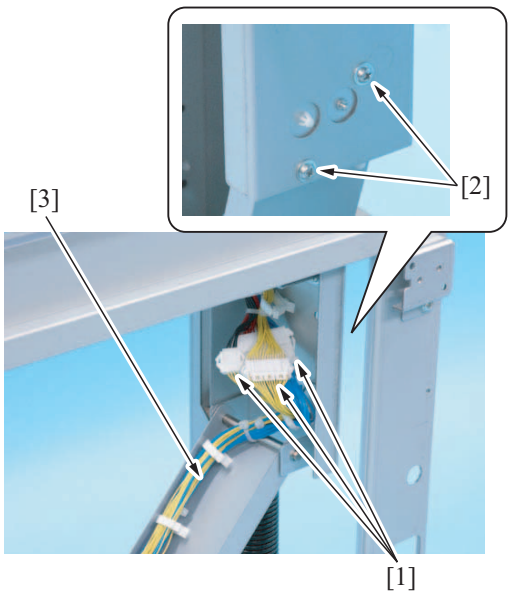
3. Pull out the Z folding/conveyance unit [1].



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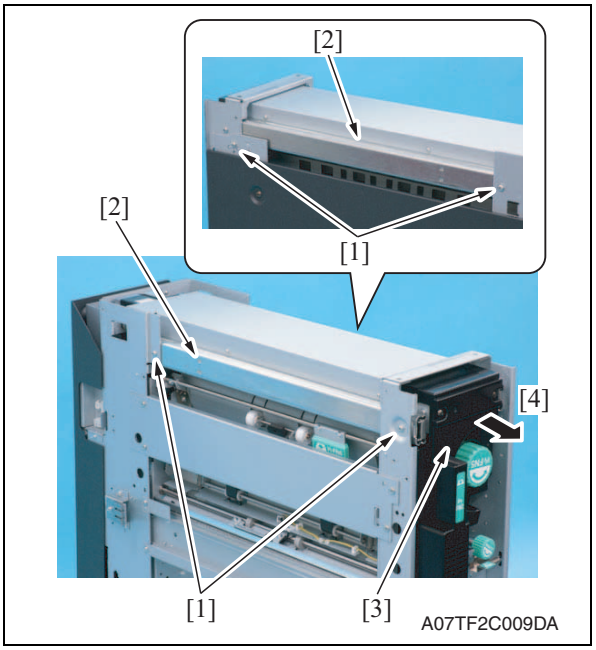
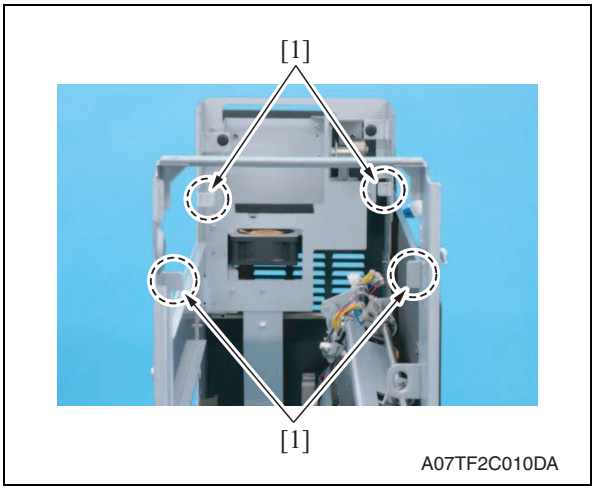
4. Disconnect three connectors [1]and remove two screws [2], and remove the arm [3].

5. Reinstall the Z folding/conveyance unit back again.



6. Remove four screws [1], and remove Z-folding/conveyance unit [3] to the front [4] by holding the rails [2] at the both sides.



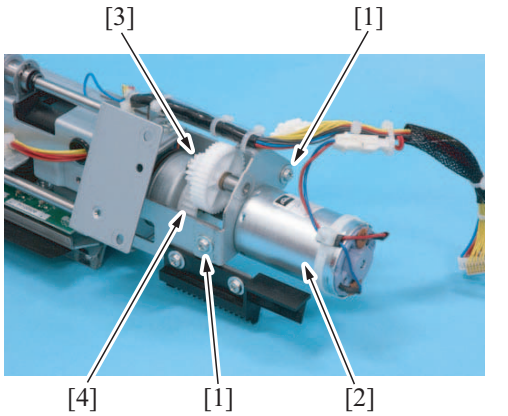
NOTE

- **When placing the Z-folding/conveyance unit, place it on the flat surface with its top or left side down.**
- **When reinstalling the Z-folding/conveyance unit, be sure to place the rails on the rail holders [1] at four positions.**

7. Reinstall the above parts following the removal steps in reverse.

3.3.8 Punch motor (M4)

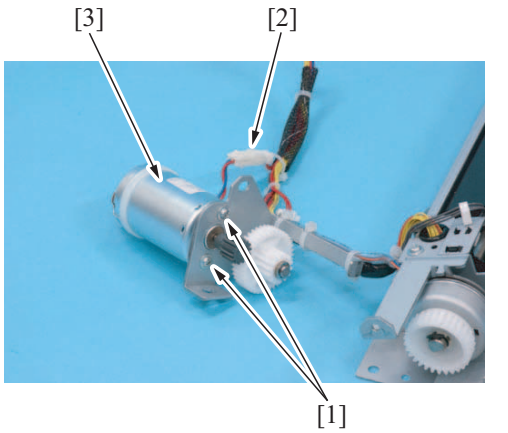
1. Remove the Z folding unit.
See P.14
2. Remove the punch unit.
See P.17



3. Remove two screws [1], and remove the punch motor assy [2].

NOTE

- **When reinstalling the punch motor assy [2], press the punch motor gear [3] to the gear [4]. Be sure to check that the gears rotate smoothly and there is appropriate backlash.**

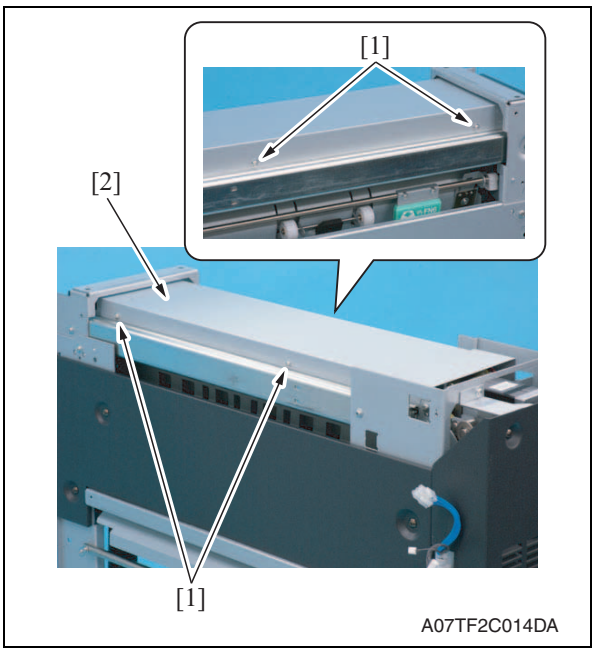


4. Remove two screws [1] and disconnect the connector [2], and remove the punch motor [3].

5. Reinstall the above parts following the removal steps in reverse.

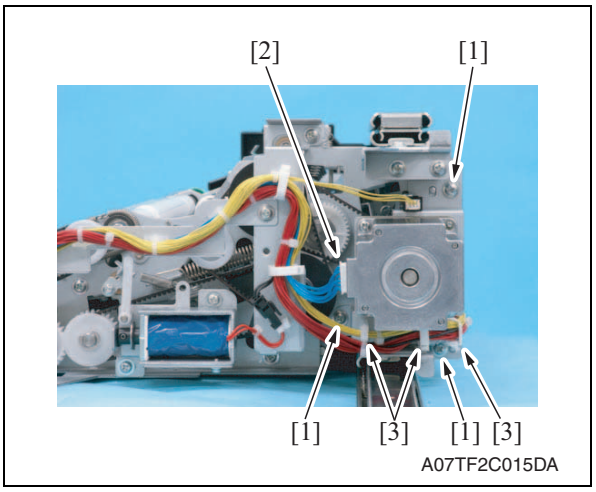
3.3.9 Main motor (M6)

1. Remove the Z folding unit.
See P.14
2. Remove the upper cover.
See P.12

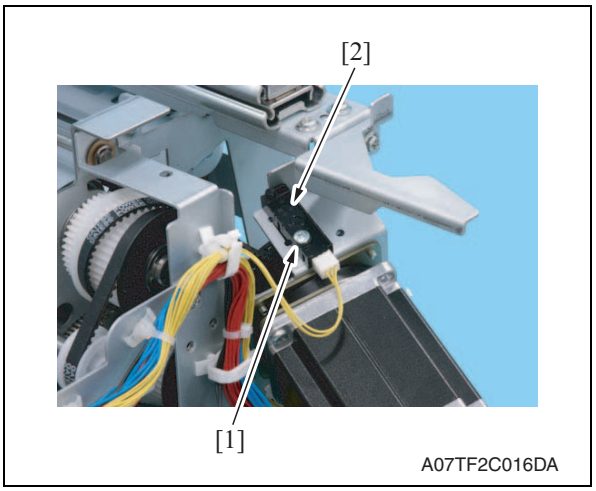


3. Remove four screws [1], and remove the conveyance upper cover [2].

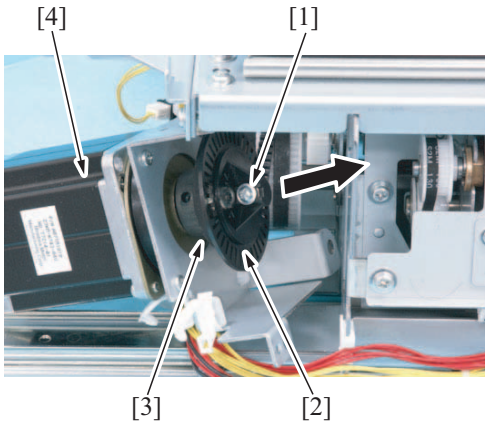
4. Remove the Z folding/conveyance unit.
See P.18



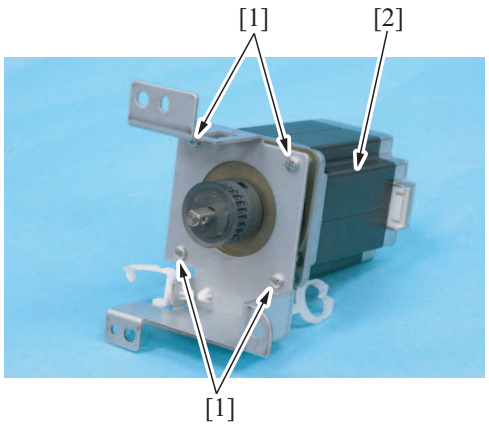
5. Remove three screws [1], and disconnect the connector [2], and remove the harness from three wire saddles [3].



6. Remove the screw [1], and remove the conveyance encoder sensor (PS10) [2].



7. Remove the screw [1], the slit circular disc [2] and the belt [3], and remove the main motor assy [4]

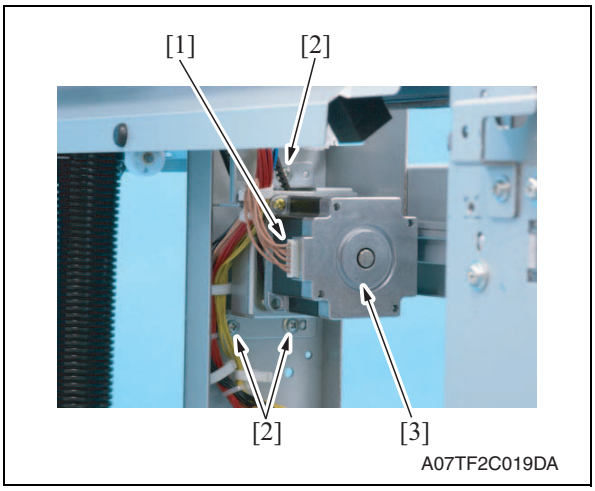


8. Remove four screws [1], and remove the main motor [2].

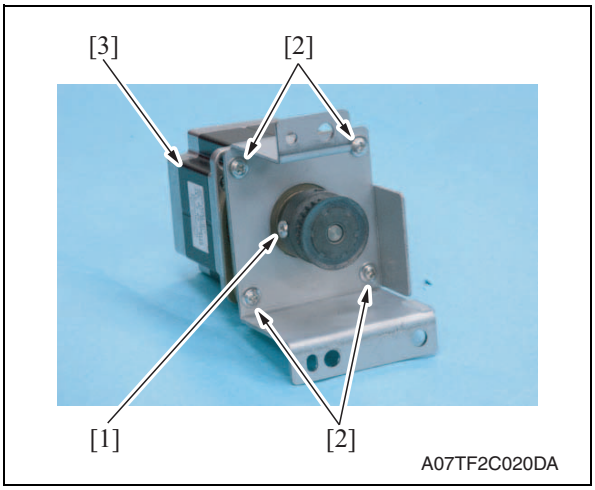
9. Reinstall the above parts following the removal steps in reverse.

3.3.10 Registration motor (M1)

1. Remove the Z folding unit.
See P.14



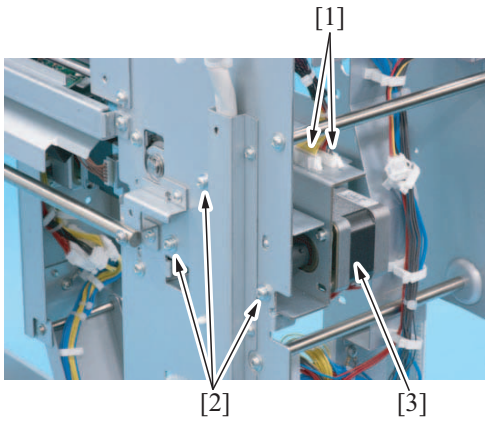
2. Disconnect the connector [1], and remove three screws [2], and remove the registration motor assy [3].



3. Remove the screw [1].
4. Remove four screws [2], and remove the registration motor [3].
5. Reinstall the above parts following the removal steps in reverse.

3.3.11 Punch shift motor (M5)

1. Remove the Z folding unit.
See P.14
2. Remove the rear cover.
See P.11



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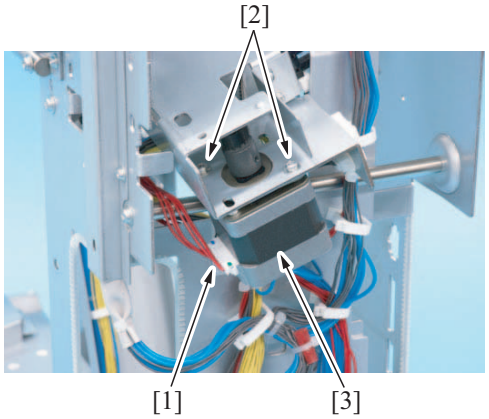
3. Disconnect two connectors [1] and remove three screws [2], and remove the punch shift motor assy [3].



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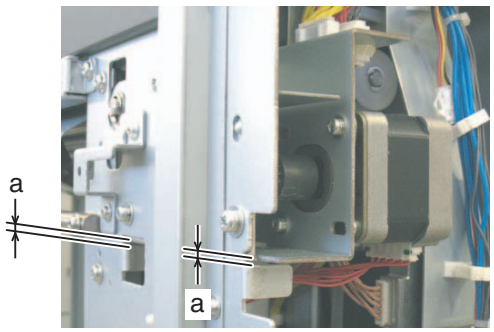
4. Disconnect the connector [1] and remove two screws [2], and remove the punch shift motor [3].



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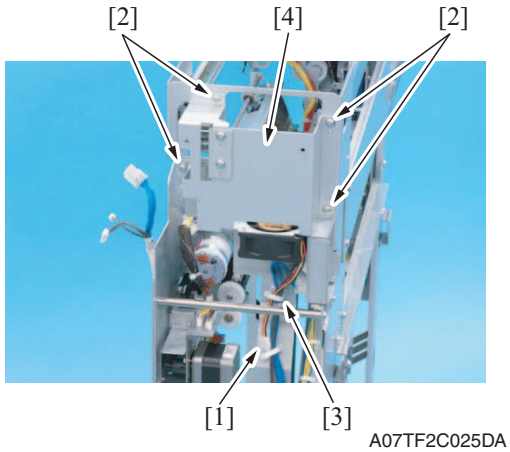
NOTE

- **When installing the punch shift motor assy, adjust its position so that there is a clearance of "a", as specified below, at the front and rear sides and make sure that the motor assy is horizontal.**
  Adjustment value: "a" = 2 mm

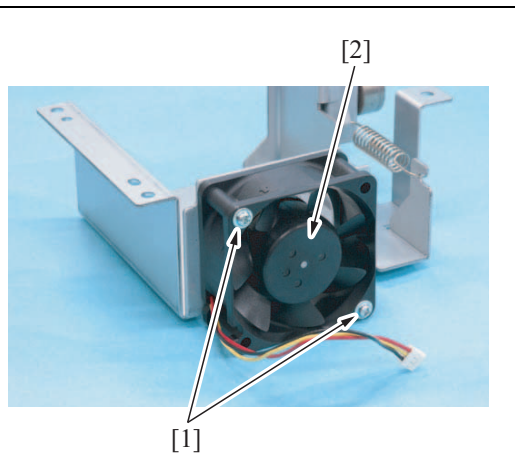
5. Reinstall the above parts following the removal steps in reverse.

3.3.12 Main motor cooling fan (FM1)

1. Remove the Z folding unit.
See P.14
2. Remove the rear cover.
See P.11
3. Remove the upper cover.
See P.12



4. Disconnect the connector [1], and remove four screws [2], and remove the harness from wire saddle [3], and remove the main motor cooling fan assy [4].

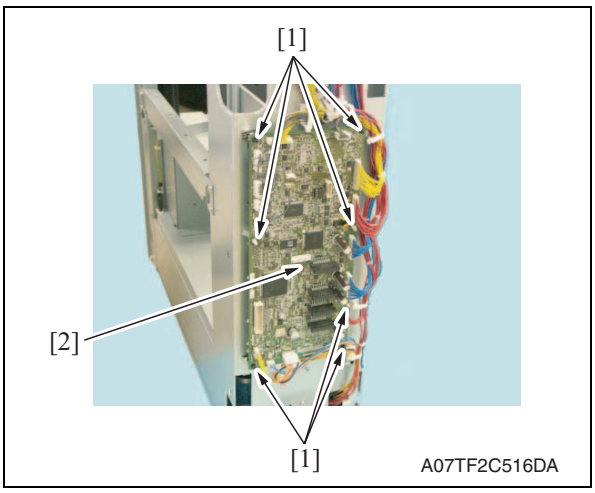


5. Remove two screws [1], and remove the main motor cooling fan [2].

6. Reinstall the above parts following the removal steps in reverse.

3.3.13 ZU control board (ZUCB)

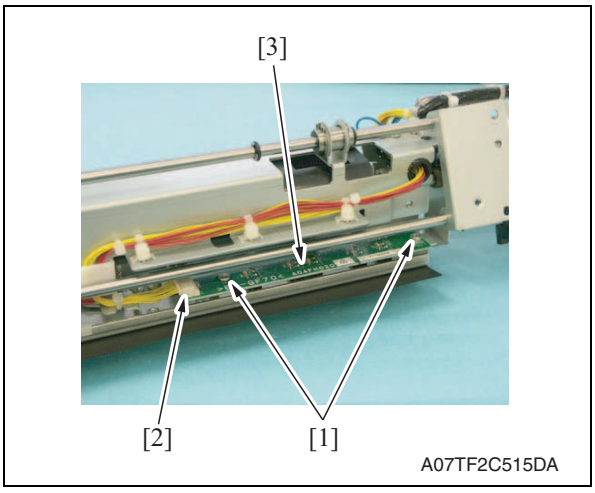
1. Remove the Z folding unit.
See P.14
2. Remove the punch unit.
See P.17



3. Disconnect all thirteen connectors from the ZU control board.
4. Remove seven board supports [1], and remove the ZU control board [2].
5. Reinstall the above parts following the removal steps in reverse.

3.3.14 Paper size detect board (PSDTB)

1. Remove the Z folding unit.
See P.14
2. Remove the punch unit.
See P.17



3. Remove two screws [1], and disconnect the connector [2], and remove the paper size detect board [3].
4. Reinstall the above parts following the removal steps in reverse.

ADJUSTMENT/SETTING

4. HOW TO USE THE ADJUSTMENT SECTION

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

Advance checks

Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

⚠ CAUTION

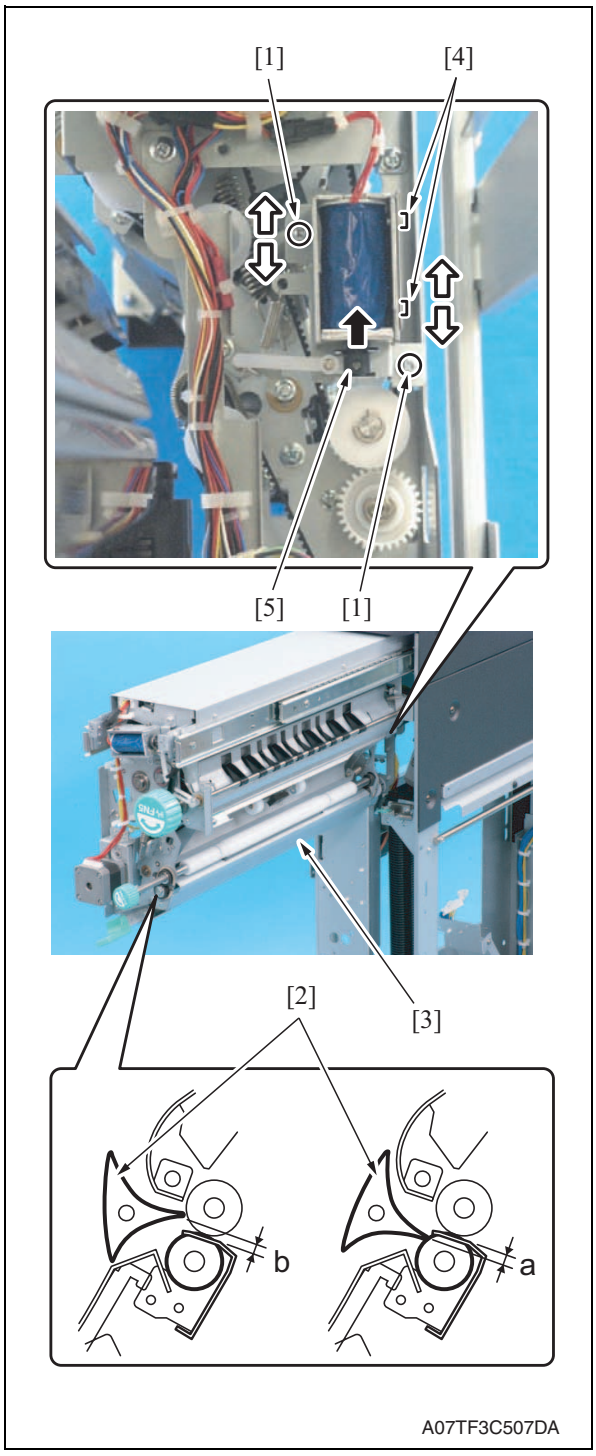
- **To unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

5. MECHANICAL ADJUSTMENT

5.1 Gate solenoid/Lw adjustment

- Make this adjustment when the gate solenoid/Lw (SD1) is replaced with a new one.

1. Remove the Z folding unit.
See P.14
2. Remove the front cover.
See P.13
3. Pull out the Z folding/conveyance unit.



4. Loosen two screws [1] and then visually adjust so that the gate/Lw [2] maintains the standard value a relative to the guide plate [3]. Then, tighten the two screws [1].
Standard value: a = 3 mm to 5 mm
5. Loosen two screws [4] and adjust the gate /Lw [2] so that the clearance between the gate /Lw [2] and the guide plate [3] gets to the standard value “b” while gate solenoid/Lw turns ON and the plunger [5] is pulled, and then tighten two screws [4].
Standard value: b = 2 mm to 4.6 mm

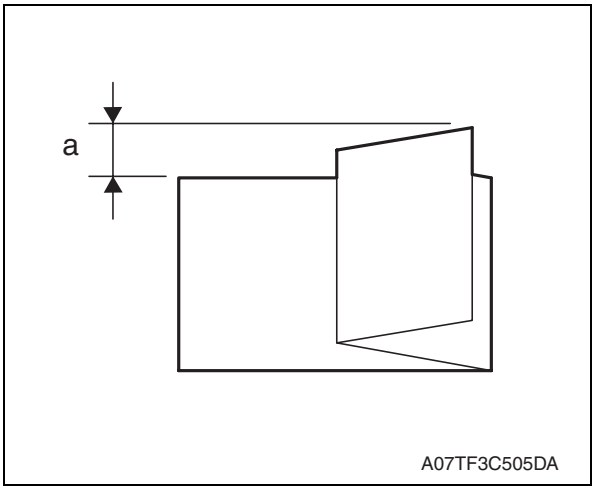
5.2 1st folding skew adjustment

- Conduct the 1st folding skew adjustment when the skew of the 1st folding is not within the standard value.

NOTE

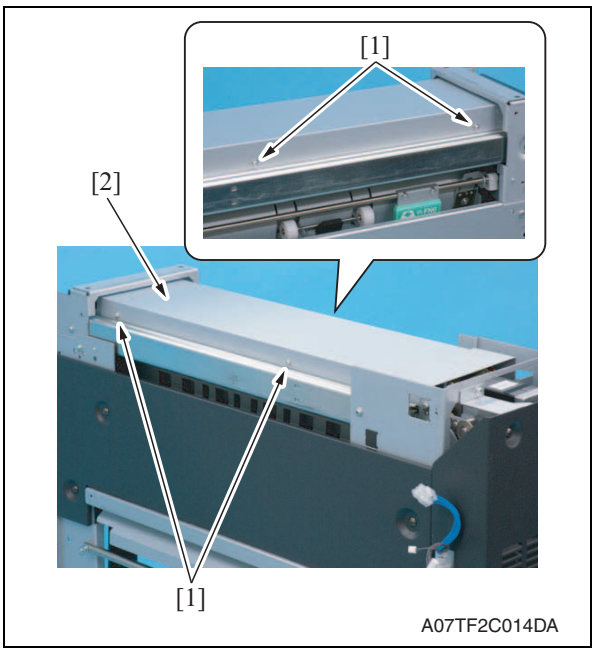
- **This adjustment affects the 1st Z-fold position. Be sure therefore to perform [1st Z-fold Position] of the service mode whenever this adjustment has been completed.**
  See P.605 of the main body service manual.

1. Remove the upper cover.
See P.12

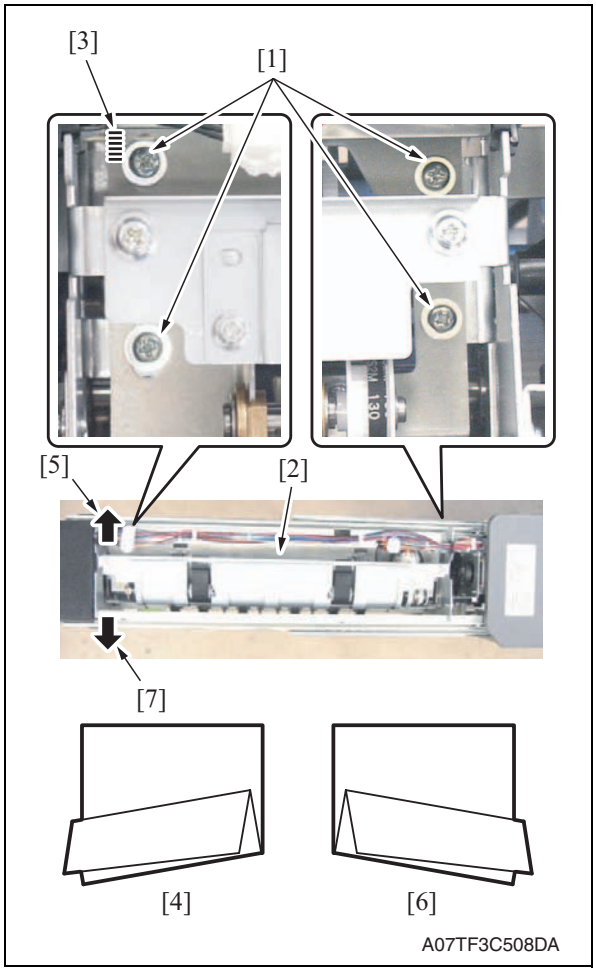


2. Perform the Z-folding printing operation on A3 or 11 x 17 paper and check to see if the skew of the 1st folding is within the standard value "a".
Standard value: a = 2 mm or less
When the value is not within the standard value, perform the following procedure.

3. Open the front door, and pull out the Z folding/conveyance unit.



4. Remove four screws [1], and remove the conveyance upper cover [2].



5. Loosen four screws [1].
6. Adjust the 1st stopper assembly [2] by moving the front side of the assembly to right and left by referring to the markings [3], and then tighten the four screws [1].

- **When the skew pattern is [4], move the front side of the 1st stopper assembly [2] to the left [5].**
- **When the skew pattern is [6], move the front side of the 1st stopper assembly [2] to the right [7].**

7. Replace the Z folding/conveyance unit, and then perform the Z-folding printing operation and check to see if the skew of the 1st folding is within the standard value.
8. Repeat steps 5 to 7 until the standard value can be obtained.

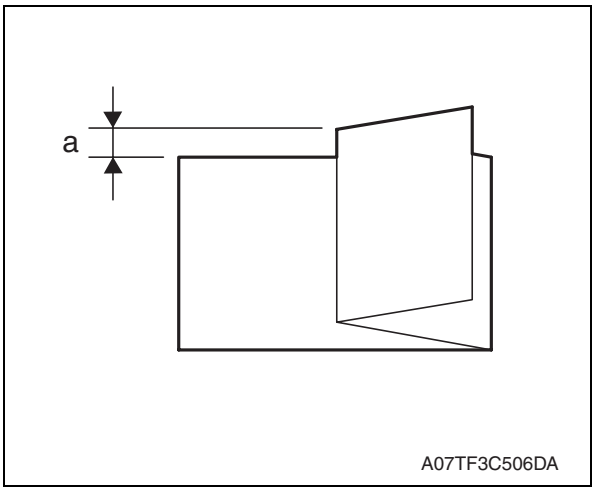
5.3 2nd folding skew adjustment

- Conduct the 2nd folding skew adjustment when the skew of the 2nd folding is not within the standard value.

NOTE

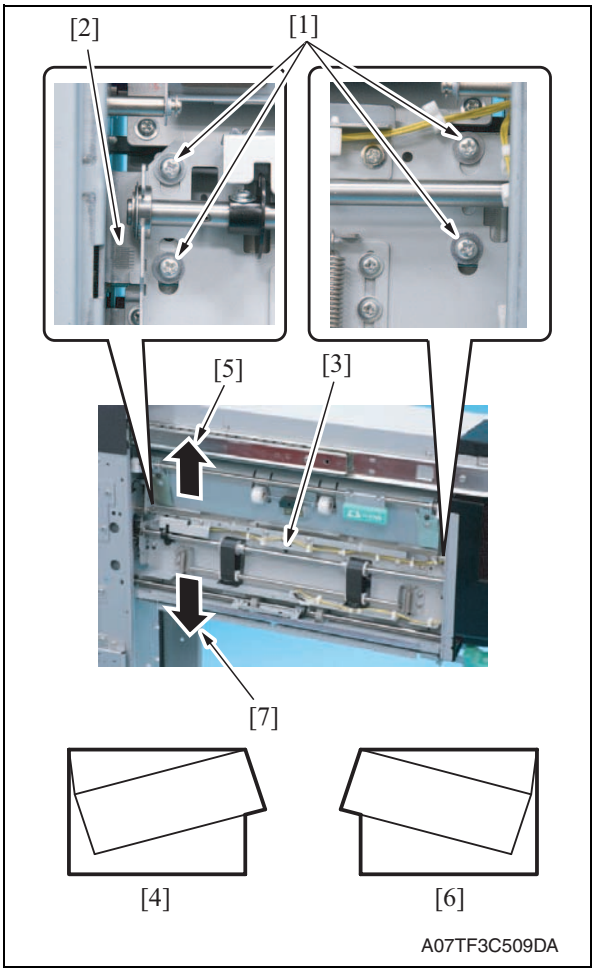
- **This adjustment affects the 2nd Z-fold position. Be sure therefore to perform [2nd Z-fold Position] of the service mode whenever this adjustment has been completed.**

See P.605 of the main body service manual.



1. Perform the Z-folding printing operation on A3 or 11 x 17 paper and check to see if the skew of the 2nd folding is within the standard value "a".
   Standard value: a = 2 mm or less
   When the value is not within the standard value, perform the following procedure.

2. Open the front door, and pull out the Z folding/conveyance unit.



3. Loosen four screws [1].
4. Adjust the 2nd stopper assembly [3] by moving it vertically by referring to the markings [2], and then tighten the four screws [1].
   - When the skew pattern is [4], move the back side of the 2nd stopper assembly [3] upward [5].
   - When the skew pattern is [6], move the back side of the 2nd stopper assembly [3] downward [7].
5. Replace the Z-folding/conveyance unit, and then perform the Z-folding printing operation and check to see if the skew of the 2nd folding is within the standard value.
6. Repeat steps 4 to 6 until the standard value can be obtained.

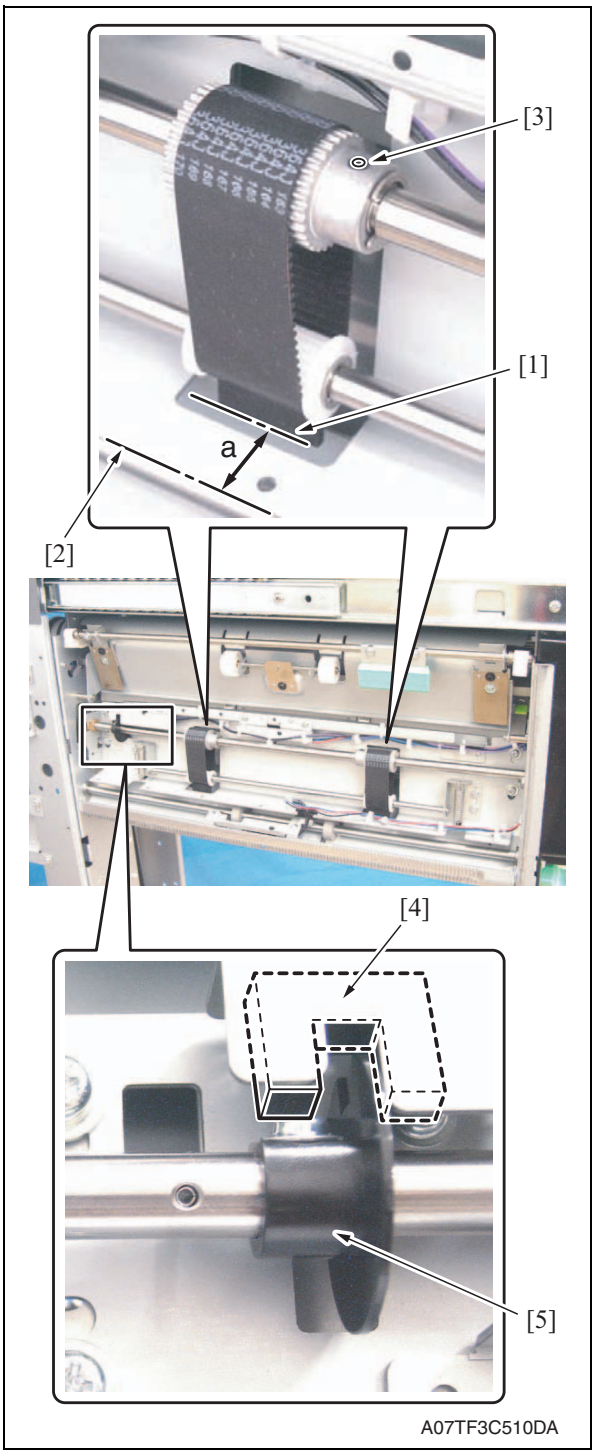
5.4 2nd stopper position adjustment

- Conduct this adjustment when the 2nd folding position cannot be adjusted from the service mode or the skew of the 2nd folding cannot be adjusted by the procedure in “6.3 2nd folding skew adjustment.”

NOTE

This adjustment affects the 2nd Z-fold amount and 2nd Z-fold position. Be sure therefore to perform the following adjustment procedure whenever this adjustment has been completed.

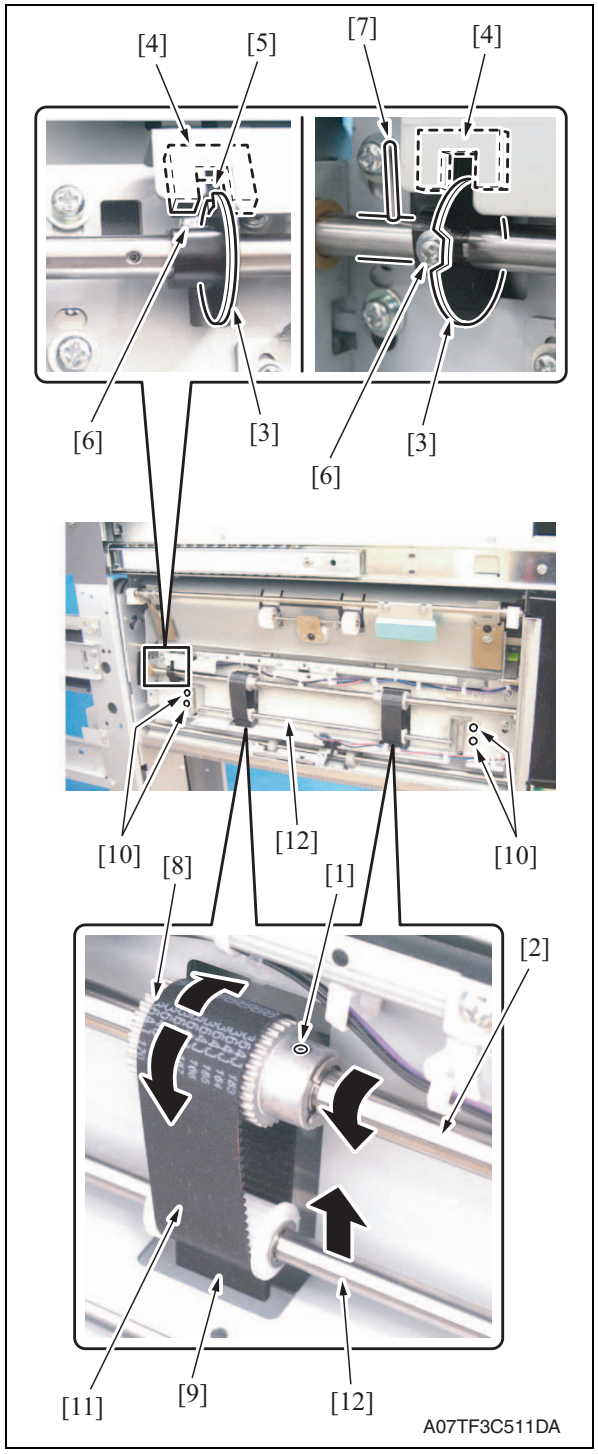
- **2nd folding skew adjustment**
  See P.31
- **[2nd Z-fold Position] of the service mode**
  See P.605 of the main body service manual.



1. Conduct the Z-folding printing operation to move the 2nd stopper [1] to the home position, and then turn OFF the main power switch of the main body.
2. Open the front door, and pull out the Z folding/conveyance unit.
3. Check to see if the distance between the 2nd stopper [1] and inside edge of the guide plate [2] is within a standard value.
   Standard value: a = 20 ± 0.5 mm
4. When the value is not within the standard value, perform the following procedure.
5. Loosen two screws [3] with the hex wrench, and then adjust the distance between the 2nd stopper [1] and the inside of the guide plate [2] so that it gets to the standard value a.

NOTE

- **Be sure not to rotate the actuator [5] of the 2nd stopper home sensor [4] during the adjustment. It may be moved from the home position.**
- **Conduct the following steps 6 to 14 only if you cannot reach to the screws [3] with the hex wrench when they are located in side of the 2nd stopper assembly.**



6. Rotate the shaft [2] so that you can reach to two screws [1] with the hex wrench.
7. Loosen two screws [1].
8. Rotate the shaft [2] so that the actuator [3] is roughly positioned to the home position [5] of the 2nd stopper home sensor [4].

NOTE

- **Never remove the screw [6] from the actuator [3].**
- **At the appropriate position, the anti-rotation pin [7] points upward when the actuator [3] faces to the left.**

9. Rotate the pulley [8] to move the 2nd stopper [9] to the position within the standard value.
10. Loosen four screws [10].
11. Lift up the shaft [12] upward enough to remove the belt [11] from the pulley [8], and then rotate the pulley [8] without moving the shaft [2] and the 2nd stopper [9] so that the screw [1] faces outside.
12. Tighten two screws [1].
13. Tighten four screws [10].

NOTE

- **Before tightening the screws [10], be sure to check the tension is exerted on two belts [11].**

14. Repeat the steps 3 to 5 to adjust the 2nd stopper to the position within the standard value.

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UPDATING STATUS

DATE	UPDATED PAGES	PAGES	CODE
10/2009	1ST EDITION	39	Y111420-1